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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,791	10/27/2003	Li-Yi Chen	CMOP0025USA	2790

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NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
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MERRIFIELD, VA 22116

EXAMINER

BECK, ALEXANDER S

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/605,791

Applicant(s)

CHEN ET AL.

Examiner

Alexander S. Beck

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Acknowledgment is made of the amendment filed by the Applicant on January 3, 2007, in which: Claims 1,3,4 and 7 are amended; Claim 2 is cancelled; and the rejections of the claims are traversed. Claims 1 and 3-14 are currently pending in U.S. Application Serial No. 10/605,791, and an Office Action on the merits follows.

Response to Arguments

2. Applicant's arguments with respect to Claims 1 and 3-14 have been considered but are moot in view of the new grounds of rejection.

Applicant argues the driving method disclosed by Knapp involves using a control logic circuit to drive the driver circuits separately. Examiner agrees.

However, Knapp discloses in the background of the invention that active matrix liquid crystal display devices in which the matrix array of pixels is effectively divided into two (upper and lower) sub-matrices by splitting the column address conductors and in which the column address conductors in each sub-matrix are supplied with data signals by two separate column driver circuits are known (Knapp: pg. 1, par. [0007]). Moreover, in these known devices the sub-matrices are addressed simultaneously rather than consecutively, for example with corresponding rows of pixels each sub-matrix being selected and provided with data signals at the same time (i.e. with the first rows in each sub-matrix being addressed together, followed by the second rows, and so on) (Knapp: pg. 1-2, par. [0007]).

As a consequence of this manner of driving, the frequency of addressing the pixel can be halved which could result in some reduction of power dissipated in the column driver circuits (Knapp: pg. 2, par. [0007]).

Knapp does not incorporate the simultaneous driving method disclosed above because in order to achieve this simultaneous addressing of the sub-matrices external circuits are required to generate a video signal with an appropriately altered format which circuits themselves consume power and so negate any benefit in any power savings in the column driver circuits that may be obtained (Knapp: pg. 2, par. [0007]).

While Knapp teaches the simultaneous driving of the display in a negative manner, the teaching states that power conservation in the column driver circuits can be achieved. Thus, it is the Examiner's position that at the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the embodiment of Knapp such that the upper and lower sub-matrices are driven simultaneously. The suggestion/motivation for doing so would have been power conservation in the column driver circuits.

A prior art reference that "teaches away" from the claimed invention is a significant factor to be considered in determining obviousness; however, "the nature of the teaching is highly relevant and must be weighed in substance. A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use." In re Gurley, 27 F.3d 551, 554 31 USPQ2d 1130, 1132 (Fed. Circ. 1994)

With respect to Knapp, the known or obvious composition is the simultaneous driving of upper and lower sub-matrices to achieve power conservation in the column driver circuits. While this driving method may be inferior to overall power saving of the display including external circuits other than the column driver circuits, it is a fair teaching for simultaneous driving.

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In the field of engineering, solving problems oftentimes requires the balancing of various factors. If, for example, the design limitations presented to one of ordinary skill in the art were concerned with power conservation in the column driver circuits alone, it would have been obvious to incorporate the simultaneous driving method into the teachings of Knapp even though it may be somewhat inferior to overall power consumption of the external circuits. The loss of power conservation in these external circuits is a factor that must be sacrificed to achieve greater power conservation in the column driving circuits.

Applicant argues that Knapp does not expressively suggest the first and second scanning directions are identical, the third and first scanning directions are identical, the third and first scanning directions are opposite, or the first scanning direction and the second scanning direction are opposite. However, the Examiner notes that these limitations were rejected in the previous Office Action (i.e. the non-final Office Action mailed on October 3, 2006) as an obvious matter of design choice.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner

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to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claims 1 and 3-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Knapp (U.S. Publication No. 2002/0063671 A1, hereinafter KNAPP).

As to independent **Claim 1**, KNAPP teaches/suggests a display panel in **Figure 3** comprising: a first scanning band (1 through K), a second scanning band (K+x through M) and a third scanning band (K through K+x) positioned between the first scanning band and the second scanning band, and each scanning band including a plurality of parallel scanning lines (1 through M); a plurality of parallel data lines (1 through N) extending across the first scanning band, the second scanning band and the third scanning band, the data lines and the scanning lines being perpendicular to each other, and each of the data lines including a disconnecting point positioned in the third scanning band; a plurality of pixel units (10), each pixel unit being positioned around an intersection point of one scanning line and one data line and being electrically controlled by both the scanning line and the data line; and a first data driver (35A) and a second data driver (35B) electrically connected to the data lines for inputting image data into each pixel unit (KNAPP: page 4, paragraphs [0027,0028]).

KNAPP does not disclose expressly for the embodiment in **Figure 3** that when scanning the first scanning band and the second scanning band simultaneously, the first data driver inputs the image data into the first scanning band and the second data driver inputs the image data into the second scanning band.

However, KNAPP does teach/suggest in the background of the prior art a first data driver and a second data driver electrically connected to the data lines for inputting image data into each pixel unit, such that when scanning the first scanning band and the second scanning band simultaneously, the first

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data driver inputs the image data into the first scanning band and the second data driver inputs the image data into the second scanning band (KNAPP: pg. 1-2, par. [0007]).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the teachings of KNAPP such that when scanning the first scanning band and the second scanning band simultaneously, the first data driver inputs the image data into the first scanning band and the second data driver inputs the image data into the second scanning band, as taught/suggested in the background of KNAPP.

The suggestion/motivation for doing so would have been to reduce the power dissipated in the column driver circuits (KNAPP: pg. 2, par. [0007]).

As to **Claim 3**, KNAPP teaches/suggests the display panel in **Figure 3** further comprising a signal supplier (40) for supplying each pixel unit with the image data (KNAPP: pg. 4, par. [0027,0028]).

As to **Claim 4**, KNAPP does not disclose expressly the display panel further comprising a memory for storing the image data supplied by the signal supplier, with the stored image data being further outputted from the memory into the first data driver and the second data driver.

However, the examiner takes official notice that a signal supplier, memory and first and second data drivers operating together as presently claimed is old and well known in the art (see **Figure 2** of Applicant's Admission of Prior Art).

Thus, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the teachings of KNAPP such that a signal supplier, memory and first and second data drivers operated together as presently claimed.

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The suggestion/motivation for doing so would have been to selectively display data on an active matrix by controlling the transmission of data from a controlling unit to respective data drivers by latching the data in a memory means.

As to **Claim 5**, KNAPP teaches/suggests the display panel in **Figure 3** further comprising a gate driver (30) for applying scanning signals to the scanning lines of each scanning band (KNAPP: pg. 4, par. [0027,0028]).

As to **Claim 6**, KNAPP teaches/suggests the display panel in **Figure 3** wherein when the first data driver and the second data driver respectively input the image data into each pixel unit positioned in the first scanning band and the second scanning band, the gate driver applies a first scanning signal to the scanning lines of the first scanning band in sequence according to a first scanning direction so as to enable the pixel unit electrically controlled by each scanning line of the first scanning band to accept a corresponding image data, and the first scanning signal is simultaneously applied (at least partially) to the scanning lines of the second scanning band in sequence according to a second scanning direction so as to enable the pixel unit electrically controlled by each scanning line of the second scanning band to accept a corresponding image data (KNAPP: pg. 4, par. [0027-0029]).

As to **Claim 7**, KNAPP teaches/suggests the display panel in **Figure 3** wherein when the first data driver and the second data driver input the image data into each pixel unit positioned in the third scanning band simultaneously, the gate driver applies a second scanning signal to the scanning lines of the third scanning band in sequence according to a third scanning direction (KNAPP: pg. 4, par. [0027-0029]).

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As to **Claim 8**, KNAPP teaches/suggests the display panel in Figure 3 wherein the first data driver and the second data driver input the same image data into the third scanning band (KNAPP: pg. 4, par. [0027-0029]).

As to **Claims 9-14**, KNAPP does not disclose expressly wherein the first and second scanning directions are identical, the third and first scanning directions are identical, the third and first scanning directions are opposite, or the first scanning direction and the second direction are opposite.

However, since the Applicant has failed to disclose that the various scanning directional relationships between the first, second and third directions are used for a particular purpose, or solves a stated problem, it is an obvious matter of design choice to have such a variety of scanning directional relationships in the teaching of KNAPP.

Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to further modify the teachings of KNAPP such that the various scanning directional relationships were included.

The suggestion/motivation for doing so would have been that any scanning directional relationship, including the ones claimed, would perform equally well at actively addressing individual pixels across the pixel matrix structure.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing

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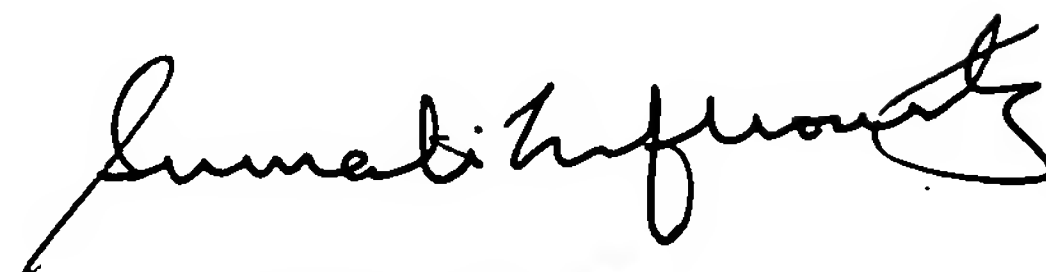
date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Alexander S. Beck** whose telephone number is (571) 272-7765. The examiner can normally be reached on M-F, 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Sumati Lefkowitz** can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

asb
1/23/07


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